



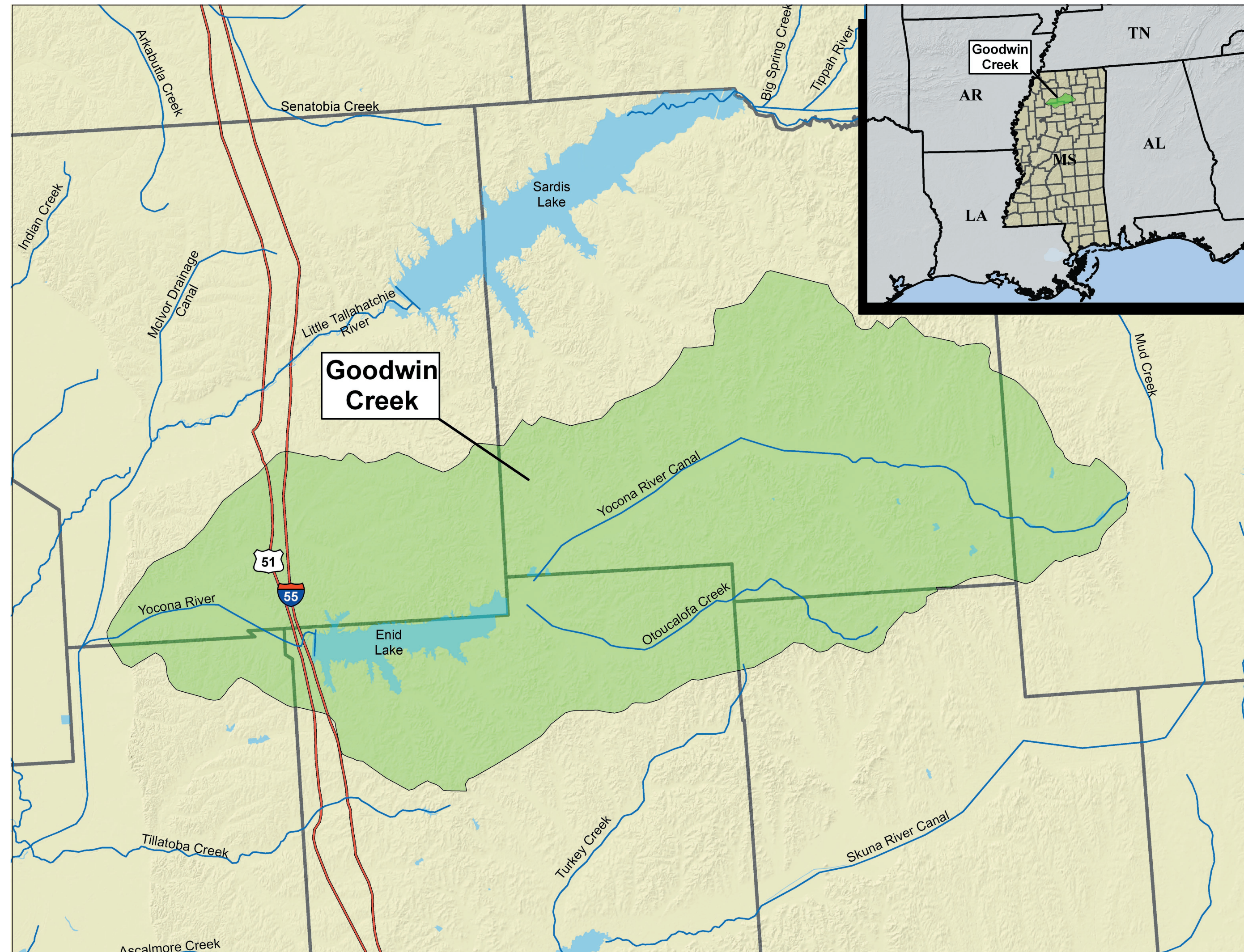
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Goodwin Creek Watershed, Mississippi: 2004-2006



An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



Approach

Water sampling: Sediment, phosphorus, nitrate-nitrogen, pathogens

Watershed models: AnnAGNPS (Annualized Agricultural Non-Point Source) and CONCEPTS (Conservational Channel Evolution and Pollutant Transport System)

Research: Measure sediment transport rates in streams. Identify sediment sources and effects on environment.

Communicating Results

Conference proceedings, journal articles, and technical reports on the effects of conservation practices on sediment and nutrients.

Collaborators

- USDA Natural Resources Conservation Service
- U.S. National Oceanic and Atmospheric Administration
- University of Mississippi National Center for Physical Acoustics

Contacts

Roger Kuhnle, USDA ARS
(rkuhnle@msa-oxford.ars.usda.gov)

Carlos Alonso, Watershed Leader
(calonso@msa-oxford.ars.usda.gov)

Terry Myers, USDA NRCS
(terry.myers@ms.usda.gov)

NRCS State Conservationist
Homer L. Wilkes

CEAP Assessment

Evaluate conservation practices effects on soil quality, water quality, and aquatic habitat.

Watershed Description

- 5,200 acres
- 90% pasture and forest
- Goodwin Creek is designated as an impaired water body under the Clean Water Act.

Issues:

Region has one of the highest erosion rates in the nation. Runoff carries sediment, excess nutrients, and fecal coliform.

Sediment causes reduced sizes and species composition of fish and invertebrates.

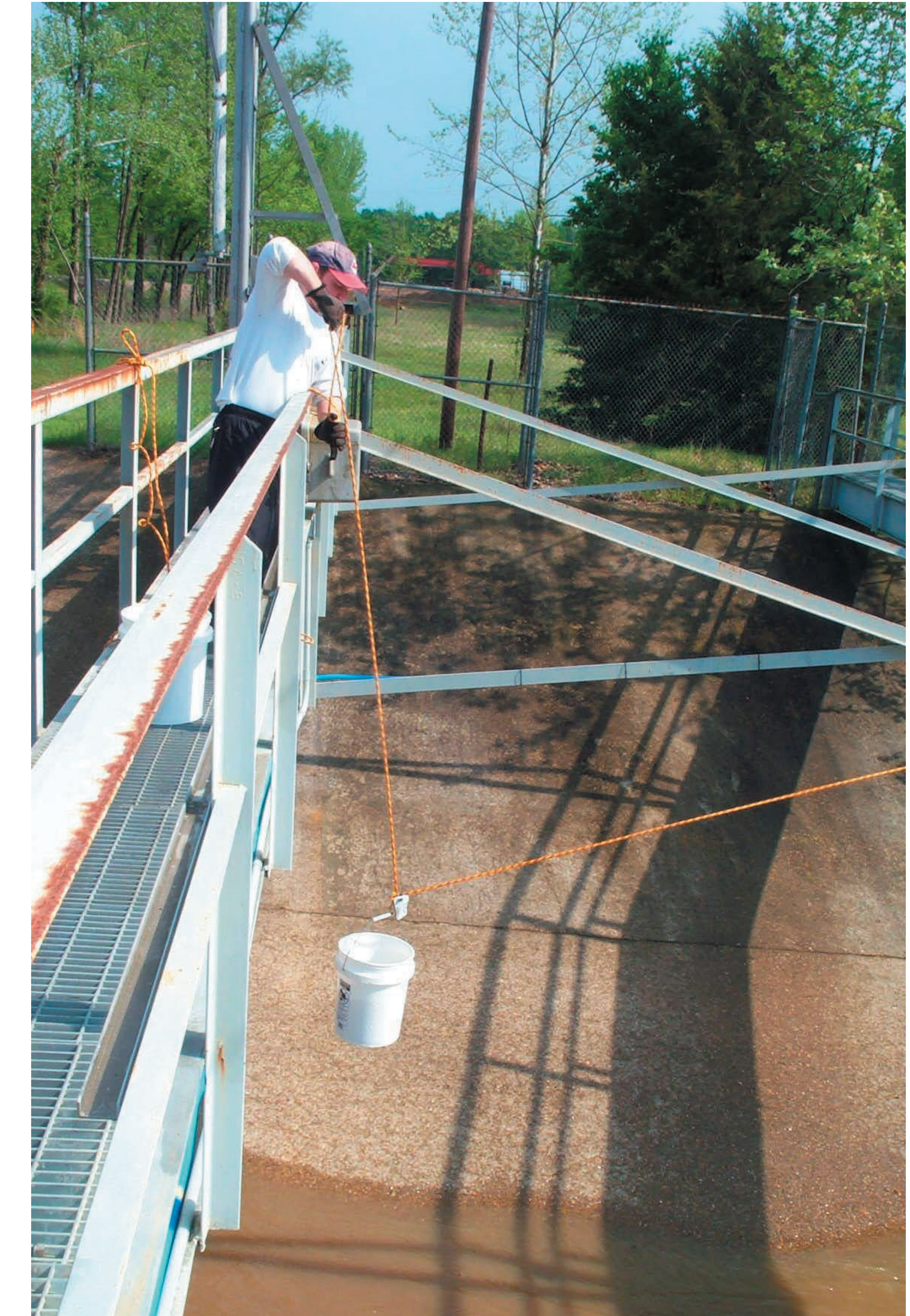
*Agricultural Research Service



Concentration of suspended sediment is measured from a moored platform on the Goodwin Creek Experimental Watershed. The use of the backscattering of acoustic energy has the potential to allow suspended sediment to be collected at close time intervals automatically on agricultural watersheds.



The channel cross-section is being surveyed after a runoff event on the Goodwin Creek Experimental Watershed. On Goodwin Creek and other watersheds, bank erosion can contribute up to 80% of the total sediment load.



Suspended sediment sampling.

Timeline

2005 December 1st ARS Benchmark Watersheds progress report **2006 December** 2nd ARS Benchmark Watersheds progress report **2007 December** 3rd ARS Benchmark Watersheds progress report **2008 December** 4th ARS Benchmark Watersheds progress report